

APRIL/MAY 2023

**FSC21/CSC21 — C++ AND DATA
STRUCTURE**

Time: Three hours

Maximum : 75 marks



SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What are manipulators?
2. Define constructor.
3. What is hybrid inheritance in C++?
4. How do you can a reference variable in C++?
5. Define an Abstract Data Type (ADT).
6. State the different ways of representing expressions.
7. Define PUSH and POP operation.
8. List out the advantages of a linked list.
9. Define outdegree of a graph.
10. Define radix sort.

SECTION B — ($5 \times 5 = 25$ marks)

Answer ALL questions.

11. (a) What are the various operations that can be performed on different data structures?

Or

- (b) What is the difference between constructor and destructor in C++?

12. (a) What is the use of abstract class in C++?

Or

- (b) What are the file opening modes? Explain.

13. (a) Explain in details about the best case complexity.

Or

- (b) Explain in details about the worst case complexity.

14. (a) What is the difference between array and linked list?

Or

- (b) What are the four main parts of a tree?

15. (a) What is the purpose of depth first search?

Or

- (b) Explain the Heap sort method.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain the static member functions in C++.

17. Explain the file modes in C++.

18. Explain the priority queues.

19. Advantages and disadvantages of BST.

20. Explain Quick sort with an example.